DOCUMENT RESUME

ED 316 160 HE 023 285

TITLE The Undergraduate Experience of Students Who Graduate. Maryland Longitudinal Study Research Highlights. Research Report No. 14.

INSTITUTION Maryland Univ., College Park. Maryland Longitudinal Study Steering Committee.

PUB DATE 90

NOTE 23p.

PUB TYPE Reports - Research/Technical (143)

EDRS PRICE MF01/PC01 Plus Postage.

DESCRIPTORS *Blacks; Career Awareness; Career Choice; College Graduates; College Students; Graduate Surveys; Higher Education; Longitudinal Studies; Minority Groups; *Occupational Aspiration; *School Holding Power; Self Concept; Student Attrition; *Student Characteristics; Student Motivation; Undergraduate Students

IDENTIFIERS *University of Maryland College Park

ABSTRACT

Data from the Maryland Longitudinal Study following 772 individuals who entered the University of Maryland College Park (UMCP) in 1980 were further analyzed to identify characteristics of students who complete the degree program within 5 years and have developed a vocational identity. Subjects were initially identified as either in the Representative Group (reflecting the actual analysis of results of a graduate survey ethnic diversity at UMCP) or Black Group. Graduates were further classified into one of four subgroups based on the level of their vocational identity at the end of the freshman and the fourth year (vocationally underdeveloped, vocationally developing, vocationally clear, and vocationally regressive). Characteristics (e.g., family status, aptitude test scores, high school class rank, emotional adjustment, and employment) of each of these subgroups are delineated. Among findings were that: there is a noticeable difference between the representative and black group in the proportion of students with a low initial vocational identity who still decided on an academic major while in high school; and there appears to be a relationship between low vocational identity and a low degree of investment in the undergraduate experience. Appendices provide: normative data for the vocational identity measure and data by subgroup. Figures are included. Contains 3 references. (SM)

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MLS RESEARCH HIGHLIGHTS

Maryland Longitudinal Study

RESEARCH REPORT #14

THE UNDERGRADUATE EXPERIENCE OF STUDENTS WHO GRADUATE

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Maryland Longitudinal Study Steering Committee
Division of Student Affairs
University of Maryland at College Park
Winter 1990

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EXECUTIVE SUMMARY

The purpose of this report is to explore what the University can do to increase the probability that individuals who enter a degree program will not only complete their program within five years of matriculation but also be equipped to deal with the economic, philosophical, and interpersonal demands of their future.

Since the development of a vocational identity is an ongoing process which naturally interacts with the education process during the undergraduate years, this report examines that interaction in students who matriculated at UMCP and graduated within five years of matriculation.

Vocational identity is defined as self-knowledge and self-understanding and how one's developing interests, talents, values, and individuality might fit into the world of work. Students studied for this report were classified into one of four subgroups, based on the level of their vocational identity at the end of their freshman year and at the end of their fourth year.

Vocationally underdeveloped students were students whose vocational identity level was below average at the beginning and end of their college career.

Vocationally developing students were students who entered college with a below average vocational identity and ended it with an above average one.

Vocationally clear students were students who both began and ended college with an above average vocational identity.

Vocationally regressive students were students who entered college with an above average vocational identity and ended it with a below average one.

As compared with the other profiles in the Representative Group, vocationally underdeveloped students were:

- most likely to be the youngest in their family
- least likely to be first generation college students
- least likely to be in top 10% of their high school class
- most likely to test over 1000 on their SATs
- least likely to have declared a major by the end of their freshman year of college
- most likely to report they had not done as well academically as they had expected their freshman and sophomore years
- most likely to have lived on campus their first three years
- least likely to have felt self-confident their first year
- most vulnerable to feelings of depression for three years
- least likely to have been employed full- or part-time their first three years
- among those employed after graduation, most likely to work at jobs that were unrelated to their major and to their intended career

As compared with the other profiles in the Representative Group, vocationally developing students were:

- most likely to report a discrepancy in educational level between father and mother
- most likely to score low on their SATs
- most likely to report family incomes of over $50,000
- most likely to keep up with their assignments their junior year
- most likely to have plans for employment after graduation
- most likely to see their post-baccalaureate job very much as entry level to their career

As compared with the other profiles in the Representative Group, vocationally clear students were:

- least likely to shift their major
- most likely to report being highly involved in the formal academic experience their freshman and junior years
- least likely to live on campus their first year
- most likely to be self-confident
- most likely to see faculty as sources of support and encouragement their senior year
- most likely to have plans for further education
- of those employed, most likely to feel their job was directly related to their major

As compared with the other profiles in the Representative Group, vocationally regressive students were:

- least likely to be last borns
- most likely to have highly educated parents
- most likely to have decided on their major in high school
- least likely to keep up with their assignments in college
- most likely to be involved in student organizations their freshman year

The University of Maryland at College Park has set the goal of increasing the graduation rate of matriculating black students. Therefore the experience of black students who earned their baccalaureate degree within five years of matriculation at the College Park campus deserves close attention. The following is a summary of the highlights of the three profiles in the Black Group discussed in the report. (Since there were only three vocationally regressive black students who graduated within five years of matriculation, the discussion of the Black Group is restricted to the three other profiles.)

As compared with the other profiles in the Black Group, vocationally underdeveloped black students were:

- least likely to be first borns
- least likely to have been in the top 10% of their high school class
- most likely to have low SAT scores
- most likely to shift their major at least once while in college
- most likely to become less involved in their undergraduate experience over time
- least likely after the freshman year to see adults in the academic community as sources of encouragement and support
- most likely to report a decrease in their self-confidence and an increase in feelings of depression in their junior year
- least likely to have plans for further education
- among those employed, least likely to see their job as directly related to their major or to their proposed career

As compared with the other profiles in the Black Group, vocationally developing black students were:

- least likely to be middle children
- most likely to report cognitive difficulties in high school
- most likely to report they had done less well academically than they'd expected their freshman year
- most likely to be involved in their work experience
- most likely to have lived on campus after their freshman year

- most likely to enter college with a low self-confidence and to end their third year with a high self-confidence
- most likely to have plans for further formal education

As compared with the other profiles in the Black Group, vocationally clear black students were:

- least likely to be last borns
- most likely to be first generation college students
- most likely to have high SAT scores
- most likely to be in the top 10% of their high school class
- most likely to have decided on their major in high school and to stay with their choice of major
- most likely to keep up with their assignments their freshman year
- most likely to be involved with faculty and staff their junior year and to perceive them as sources of support and encouragement
- most likely to be self-confident and not depressed their freshman year
- most likely to have plans for employment after graduation
- among those employed, least likely to see their job as unrelated to their major and to their career

Implications of the findings discussed in this report were offered to spur further discussion of ways in which the undergraduate experience could be enhanced and the graduation rates increased. Some of the implications concerned the interaction between vocational identity level and declaration of academic major, academic success, investment in aspects of the undergraduate experience, and the decision to continue to graduate education.

This report questions the degree to which it is realistic for the University community to assume that all of today's undergraduates can deal with the stresses and decisions imposed by the undergraduate experience without some type of individual adult support or institutional response. For many students, institutional resources in the form of concerned faculty and staff and appropriate programming to help the ongoing process of vocational identity development are essential not only to enhance the undergraduate experience and increase the graduation rate but also to make the transition from undergraduate status to post-graduate status as natural and personally relevant as possible.

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The Maryland Longitudinal Study (MLS) is a research undertaking of the Division of Student Affairs at The University of Maryland College Park. A significant number of Student Affairs staff have been involved in the study since its inception. A Steering Committee appointed by the Vice President for Student Affairs has been responsible for the methodology, data collection, and management of this project. These individuals are listed in Appendix A of the MLS report entitled "The Maryland Longitudinal Study—A Descriptive Overview: The Study's Purpose, Goals, Features, Participants, and Design."

THE UNDERGRADUATE EXPERIENCE OF STUDENTS WHO GRADUATE

I. INTRODUCTION

A. BACKGROUND AND PURPOSE OF THIS REPORT

By tradition, to earn a baccalaureate degree, one must earn a minimum of 120 credits, maintain a minimum of a 2.0 cumulative grade point average, and satisfy the requirements of the particular degree program in which one is enrolled. Completing a typical program of study requires a minimum of four academic years. Therefore, a common definition of a successful undergraduate experience is earning a baccalaureate degree within five years of matriculation. A more qualitative definition relates to the degree of students' personal commitment to the undergraduate experience. By this definition, success is far less easily—and certainly far less routinely—evaluated. The purpose of this report is to support both the enhancement of the undergraduate experience and the goal of an increased graduation rate, by heightening awareness within the University community of the undergraduate experience.

The underlying question of this report is what the University can do to increase the probability that individuals who enter a degree program here will not only complete the degree program within five years of matriculation but also become equipped to deal with the economic, philosophical, and interpersonal realities of their future. The undergraduate years have typically been considered ones during which one's accumulated skills, values, and knowledge about oneself and one's world are examined, reorganized, and enhanced, within the context of a learning environment. Students who leave college before degree completion because they see little relationship between their future and what they are gaining as undergraduates, represent a failure on the part of the educational system to identify, encourage, and support that relationship.

Vocational identity has been defined as self-knowledge and self-understanding and how one's developing interests, talents, values and individuality might fit into the world of work. Vocational identity must not be confused with a career decision per se (i.e., a decision on the specific career one is seeking). Vocational identity development is an ongoing process which naturally interacts with the education process during the undergraduate years. This report examines that interaction in students who matriculated at UMCP and graduated within five years of matriculation.

Several questions will be explored. For example, does a clear vocational identity serve as a motivator during the college years by establishing a linkage between the undergraduate experience and the world beyond the campus? Do students who have a relatively clear initial vocational identity show more investment in the undergraduate experience than students whose initial vocational identity is less clear? Does the vocational identity of students typically become clearer over time? Are there students whose vocational identity becomes less clear with time, and if so, is that confusion reflected in other aspects of their experience in college? In exploring these questions, we hope to provide an overview of the undergraduate experience of students who graduate that will capture the reader's interest, spur further discussion of the topic, and ultimately contribute to the enhancement of the undergraduate experience.

Data from participants in the Maryland Longitudinal Study (MLS) (see endnote 1) form the foundation of this report. MLS participants included in this report met the following two criteria. First, they earned a baccalaureate degree either from UMCP or from their transfer institution within five years of matriculation. Second, they continued participation with the MLS through the completion of the *Graduate Survey* (see endnote 2).

B. OVERVIEW

In order to discuss the questions raised in the Introduction, students are grouped according to the level of their vocational identity at the beginning and end of their undergraduate years. Specifically, subgroups are identified, based on the level of students' vocational identity both at the end of their freshman year and at the end of their senior year. In the next two sections, similarities and differences within these subgroups concerning prematriculation characteristics, characteristics during the college years, and postgraduate variables are examined.

Prematriculation charactertistics include sibship order, parents' education and income level; SAT scores; high school rank; and cognitive habits while in high school (e.g., being too bored to study or having trouble concentrating on studies).

Characteristics related to the college years include when students in each subgroup decided on their academic major; the degree to which their academic performance, each year, met their expectations; the degree to which they kept up with their studies; their involvement in various aspects of the college experience; whether they were commuters or campus residents; employment status during each academic year; major sources of encouragement and support; their levels of self-confidence and depression; and what they thought, retrospectively, was the most significant change which occurred in them since entering college.

Post-graduation variables include students' immediate plans for after graduation; the degree of difficulty in their transition from college; and, if employed, the primary resource used to locate their job, the degree to which their job is related to their field of study and the degree to which their job is an entry level position for the career they plan to enter.

The report concludes with a discussion of implications concerning the interaction of vocational identity development and the undergraduate experience.

C. DEFINITIONS

The instrument used by MLS to measure vocational identity is the vocational identity subscale of *My Vocational Situation* (Holland, Daiger, & Power, 1980). This subscale is comprised of 18 true/false questions designed to determine the degree of clarity and stability of an individual's self-understanding, ("I don't know what my major strengths and weaknesses are"), talents ("My estimates of my abilities and talents vary a lot from year to year") and goals related to vocational issues ("I can't understand how some people can be so set about what they want to do"). The scale has a range of 0 to 18 with a high score indicative of a high level of vocational identity. See Appendix A for normative data on the vocational identity subscale of *My Vocational Situation*.

For both the Representative Group and the Black Group, subgroups were defined, using students' scores on the MVS vocational identity subscale at two points in time: the spring of their freshman year (1981), and the spring of their fourth year (1984). Average MVS vocational identity scores for each sex, within the Representative Group and within the Black Group, were determined for the two points in time. Students in the Representative and Black Groups were then categor-

ized according to whether their vocational identity scores fell at or below that mean, or above that mean, *at each of the two points in time*. The four categories and their operational definitions follow:

VOCATIONALLY UNDERDEVELOPED STUDENTS: measured *at or below* the 1981 mean and *at or below* the 1984 mean, for their sex, on the MVS vocational identity subscale.

VOCATIONALLY DEVELOPING STUDENTS: measured *at or below* the 1981 mean and *above* the 1984 mean, for their sex, on the MVS vocational identity subscale.

VOCATIONALLY CLEAR STUDENTS: measured *above* the 1981 mean and *above* the 1984 mean, for their sex, on the MVS vocational identity subscale.

VOCATIONALLY REGRESSIVE STUDENTS: measured *above* the 1981 mean and *below* the 1984 mean, for their sex, on the MVS vocational identity subscale.

Figures 1 and 2 depict the annual average MVS vocational identity score for the subgroups to be discussed.

FIGURE 1
Vocational Identity Scores
Representative Group

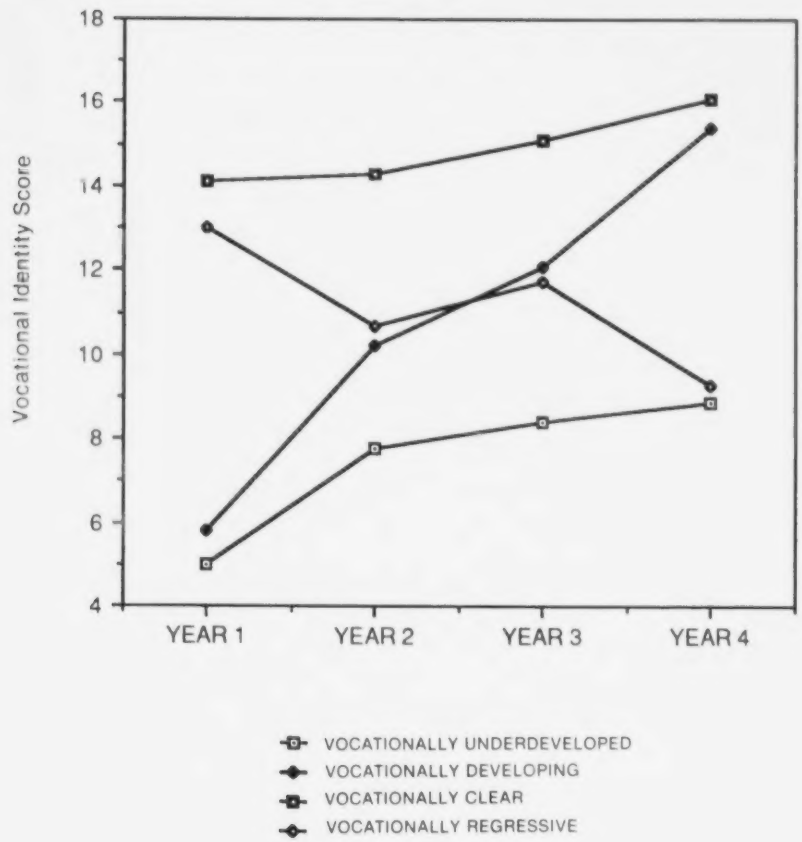
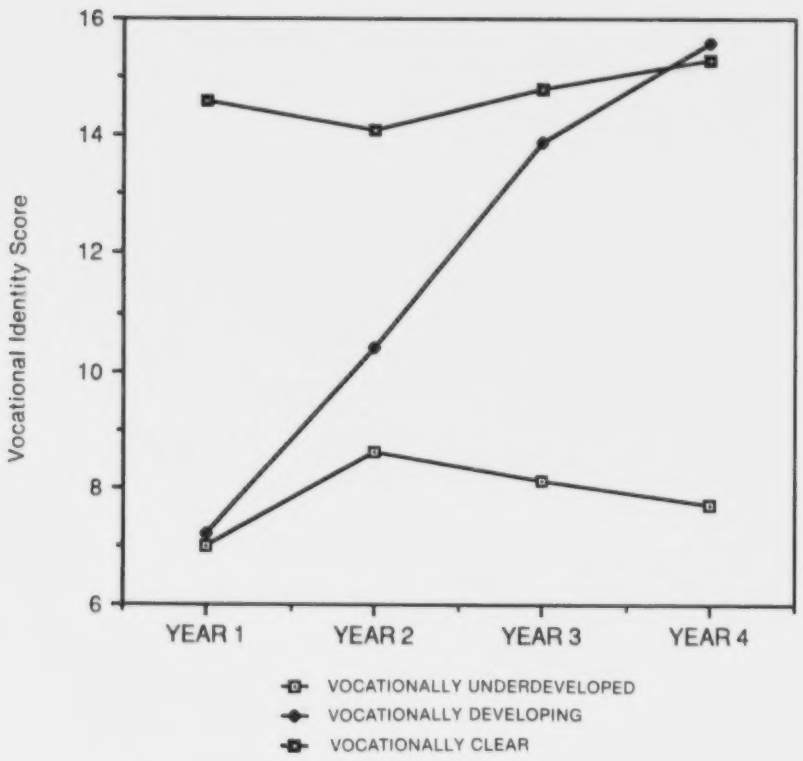


FIGURE 2
Vocational Identity Scores
Black Group



II. FOUR PROFILES: THE REPRESENTATIVE GROUP

This section offers a description of each of the four subgroups in the Representative Group, based on self-reported data gathered during the years of the Longitudinal Study. Appendix B summarizes these data in tabular form, thereby allowing the reader both to see trends across time and to make comparisons among the subgroups.

A. VOCATIONALLY UNDERDEVELOPED STUDENTS

Thirty percent of the students in the Representative Group studied for this report were individuals whose self-assessed vocational identity was below average at the end of their freshman year, and who after four years as undergraduates still did not have a clear idea of how their talents, interests, values and individuality might relate to the vocational world. These students showed small increases in their MVS vocational identity scores each year. Recall that the range for the vocational identity subscale is 0 to 18. The mean score for this subgroup was 5.0 in Year 1, 7.8 in Year 2, 8.4 in Year 3, and 8.9 in Year 4. In the Representative Group this was the second largest group under discussion (n = 50).

Prematriculation characteristics

Vocationally underdeveloped students were likely to be the youngest in their family. Fifty-one percent were last-borns. On the other hand, 28% were first or only children, the lowest proportion of the four subgroups. Twenty-one percent were middle children.

Vocationally underdeveloped students typically had parents who themselves had had some college experience. Indeed, 80% of their fathers and 46% of their mothers had earned a college degree. Forty-four percent were from families in which both parents had their college degrees. Only 6% were first generation college students: that is, they came from families in which neither parent had had any college experience.

Two percent reported their parents' income for 1980 was less than $20,000. Fifty-two percent reported it fell between $20,000 and $50,000; 28% reported it was over $50,000. Eighteen percent reported they didn't know their parents' income.

With a mean SAT-Math score of 544, and SAT-Verbal score of 490, this group of vocationally underdeveloped students were the only subgroup to average over 1000 on their total SAT score. Yet they were unremarkable in the demonstration of their academic motivation in high school. For example, compared to the other subgroups, they were the least likely (32%) to have been in the top ten percent of their high school graduating class. Further, they were the most likely (22%) to report that they frequently had been too bored to study in high school. A similar proportion reported having had trouble concentrating on their studies while in high school.

Characteristics related to the college years

Not surprisingly, this group of vocationally underdeveloped students were the least likely subgroup to have decided on their academic major when they matri-

culated at UMCP. Slightly more than one-third (37%) had made that decision while still in high school. Twenty-two percent chose their major during their freshman year. Forty-one percent were still undecided about their academic major at the end of their freshman year. Among those who decided on their major while still in high school, 30% remained with that major, and 70% shifted their major at least one time before graduation.

For the first two years of college, this group of vocationally underdeveloped students was the most likely to report that they had not done as well as they had expected, academically. Over the years, however, there was a decrease in the proportion who felt their academic performance had not met their expectations (44%, 39%, 23%, and 16%).

Vocationally underdeveloped students did not demonstrate a great deal of involvement in their college experience *after the freshman year*. For instance, the proportion who reported each year that they typically kept up with their reading assignments decreased from 42% in Year 1 to 37% in Year 2, to 26% in Year 3. Approximately half (51%) reported they were more than somewhat involved in their formal academic experience their freshman year. (Formal academic experience was defined as including coursework, lectures, homework, study, independent study, and research.) This proportion increased only slightly over the next two years. A larger proportion (67%) were fairly involved in interpersonal relationships with their fellow students their freshman year, although this proportion, too, decreased over the next two years. The proportion who were fairly involved with faculty and staff was minimal (6%, 2%, 2%), and less than half were fairly involved in work experiences their first two years. This proportion increased to just over half the third year. The proportion involved in student organization experiences increased somewhat over time (20%, 30%, 38%).

Residence status does not explain the relatively low level of involvement of this subgroup. Indeed, vocationally underdeveloped students were the most likely of the four subgroups to have lived on campus, particularly during their sophomore year (48%, 65%, 38%, 24%). Further, over time they were least likely to have been employed during the academic year, although the proportion who had jobs increased over time (26%, 44%, 65%, 80%).

The greatest source of support and encouragement for vocationally underdeveloped students during their undergraduate years was fellow students (63%, 74%, 79%, 92%). While faculty became an increasingly salient source of support over time for this subgroup, the proportion who received major support from faculty remained relatively low (10%, 6%, 21%, 19%). Very few considered advisors (2%, 2%, 10%, 19%) and staff (2% in Year 1, none in Year 2, and 15% in Year 3) as major sources of support and encouragement.

Despite their relatively high aptitude scores and their relatively educated families, underdeveloped students were the least likely of the four subgroups to report having felt very self-confident during their freshman year, although their self-confidence tended to increase with time. The proportion reporting frequently or always feeling self-confident rose from 21% in Year 1, to 48% in Year 2, to 60% in Year 3. They also showed the greatest vulnerability of the subgroups to feelings of depression while in college, particularly during the sophomore year. The proportion reporting having felt frequently or always depressed was 19% in Year 1, 26% in Year 2, and 19% in Year 3.

For 44% of the group of vocationally underdeveloped students, increased self-confidence was the most significant change they saw, retrospectively, as having occurred in themselves since entering college. Another 35% felt their most significant change was related to a personal trait or characteristic.

Post-graduation variables

In light of the low academic motivation and involvement of these vocationally underdeveloped students, and despite their relatively high measured scholastic aptitude, it is not very surprising that only 8% had immediate plans for graduate or professional school after graduation. Sixty-seven percent had employment plans. One quarter (25%) planned neither to continue their education nor to go to work immediately after graduation (e.g., they planned to travel, or were uncertain about plans). They were fairly evenly divided among those who felt the transition from college was difficult (46%) or easy (48%) for them.

Among the vocationally underdeveloped students who were employed at the time of the *Graduate Survey*, the majority located their position either through a friend or relative (27%), or by direct application (20%). Less than half (41%) felt their post-graduate job was directly related to their field of study, the second lowest of the four subgroups; another 37% felt their job was somewhat related to their field of study; 22% felt it was not at all related. Further, 41% felt their current job was very much an entry level position to their desired career; 39% considered it was somewhat or slightly an entry level position to their desired career, while 20% were employed in a job which they felt was not at all an entry level position for them.

B. VOCATIONALLY DEVELOPING STUDENTS

Seventeen percent of the students studied for this report in the Representative Group were individuals whose self-assessed vocational identity was below average at the end of their freshman year, and who four years later had an above average vocational identity. This subgroup by definition then is composed of individuals whose vocational identity became clarified over time. The increases in their vocational identity scores were not gradual however. The greatest increase in their vocational identity score occurred between their freshman and sophomore years. Their mean vocational identity score was 5.8 in Year 1, 10.2 in Year 2, 12.1 in Year 3, and 15.4 (out of 18) in Year 4. In the Representative Group this was the second smallest under discussion (n = 29).

Prematriculation characteristics

Sibship order was not a distinguishing variable for this group of vocationally developing students. Thirty-eight percent were first/only children, 31% were middle children, and 31% were last born children.

Vocationally developing students came from families in which the father was far more likely than the mother to have earned a college degree. While 28% came from families in which both parents had their college degree, 76% of their fathers and 28% of their mothers had a college degree. Seventeen percent were first generation college students, meaning neither parent had had any college experience.

It was the vocationally developing students who most frequently reported (41%) a combined parent income (for 1980) of over $50,000. Forty-two percent reported it fell between $20,000 and $50,000. None reported it was less than $20,000. Seventeen percent reported they did not know their parents' income.

This group of vocationally developing students had the lowest mean total SAT scores of the four subgroups: 974. Their SAT-Math mean was 506; SAT-Verbal, 468. Just over one-third (34%) reported they had been in the

top ten percent of their high school graduating class. They tended to have been engaged by their studies in high school—only 10% claimed they were typically too bored to study and a similar proportion reported having had trouble concentrating on their studies.

Characteristics related to the college years

Just under half (48%) of these vocationally developing students decided on their academic major while still in high school. Twenty-four percent decided during their freshman year, and over one in four (28%) were still undecided at the end of their freshman year. Of those who made their choice while still in high school, 28% remained with that choice, and 72% shifted at least one time before graduation.

Vocationally developing students typically were not surprised by their academic performance in college. The proportion, each year, who felt they had done less well than they had expected was 27%, 25%, 23% and 21%.

In contrast to the vocationally underdeveloped students, vocationally developing students demonstrated a relatively high degree of involvement in the undergraduate experience. The proportion reporting that they kept up with their assignments increased from 41% in Years 1 and 2, to 59% in Year 3, the highest of the subgroups that year. More generally, slightly over half (52%) were fairly involved in their freshman year formal academic experience. This proportion increased sharply in Year 2 (to 72%) and was 74% the next year. Further, nearly 70% were more than somewhat involved in interpersonal relationships with their fellow students their freshman year, and while this proportion dipped somewhat the next two years, the proportion remained well over 50%. Very few were involved to any extent in interpersonal relationships with faculty or staff (none the first year, 10% in Year 2 and 7% in Year 3). Nor were many fairly involved in student organization activities over the years (17%, 17%, 15%). The proportion more than somewhat involved in their work experiences increased from 29% to 52% to 59% over three years.

Vocationally developing students were the second most likely subgroup to have lived on campus, particularly in their sophomore year (48%, 59%, 30%, 28%). They were also most likely to have been employed either part time or fulltime, each year (41%, 74%, 73%, 90%).

Despite the high proportion of vocationally developing students who lived on campus, adult members of the campus community were not seen as major sources of support and encouragement. Fellow students were a major source of support and encouragement for a majority of these students (76%, 69%, 74%, 79%). There was a slight increase over time in the proportion who received major support from faculty, particularly after the sophomore year (10%, 11%, 26%, 25%). Support from staff (0, 7%, 15%) and advisors (0, 11%, 18%, 26%) was non-existent the freshman year, and increased only slightly over time.

As might be expected, vocationally developing students tended to gain in self-confidence over time, with the greatest gain between the freshman and sophomore years. The proportion reporting frequent or constant feelings of self-confidence rose from 32% in Year 1, to 58% in Year 2, to 59% in Year 3. Few reported having had frequent feelings of depression each year, although like the vocationally underdeveloped students, they showed a greater vulnerability to depression in the sophomore year. The proportion indicating frequent or constant feelings of depression was 7% in Year 1, 17% in Year 2, and 8% in Year 3.

Forty-six percent of the vocationally developing students felt, retrospectively, that the most significant change to have occurred in themselves since entering college was related to the development of a personal trait or characteristic. Another 31% saw their most significant change as being related to their feelings of self-confidence and self-worth—the second most likely subgroup to report that.

Post-graduation variables

Most of the vocationally developing students (93%) had immediate plans for employment after graduation. Only 7% had immediate plans to continue with their formal education after graduation. Just under half felt the transition from college had been difficult for them; 45% felt it had been easy; 7% didn't know.

Among the vocationally developing students who were employed at the time of the *Graduate Survey*, 29% reported that they had relied on friends or relatives to help them locate their position. Sixty-four percent felt their job was directly related to their field of study; another 21% felt it was somewhat related, and 14% felt it was unrelated to their field of study. Those among the vocationally developing students who were employed were the most likely subgroup (71%) to see their current job very much as an entry level position to their desired career. Another 25% felt that was somewhat or slightly the case. Only 4% felt their current job was not at all an entry level position to their desired career.

C. VOCATIONALLY CLEAR STUDENTS

Forty percent of the students in the Representative Group studied for this report indicated at the end of their freshman year that they had a relatively clear idea of their goals, interests, talents, and individuality, and this clarity remained four years later. Their yearly MVS vocational identity scores showed small but steady increases, with a mean of 14.1 in Year 1, 14.3 in Year 2, 15.1 in Year 3, and 16.1 (of a possible 18), in Year 4. This was the largest subgroup in the Representative Group (n = 67).

Prematriculation characteristics

Just over one-third (37%) of the group of vocationally clear students were first or only children; 28% were middle children; 34% were last borns.

Vocationally clear students did not tend to come from highly educated families. Twenty-four percent were first generation college students, meaning that neither parents had had any college experience. While 30% were from families in which both parents had their college degree, fathers (66%) were more likely than mothers (34%) to have earned their degree.

Although the parents of vocationally clear students were relatively less highly educated than parents in the other subgroups, only 6% earned less than $20,000 in 1980; 56% reported their parents' income fell between $20,000 and $50,000; 21% earned over $50,000; 17% reported they did not know their parents' income.

The mean total SAT score for this group of vocationally clear students was 991, with a mean Math score of 519 and Verbal score of 472. They tended to have shown good academic performance in high school, with 47% reporting they were in the top ten percent of their graduating high school class. Being too bored to study while in high school was not a problem for most of them. Only 15% reported that was typically true of them. Nine percent reported having had trouble concentrating on their studies in high school.

Characteristics related to the college years

A large majority (80%) of the vocationally clear students had decided on their academic major while

still in high school. Another 17% made that decision during the freshman year. Only 3% were still undecided at the end of their first year at UMCP. Of those who had made their choice of academic major while still in high school, over half (58%) remained with that choice, the highest proportion of the four subgroups to do so.

Vocationally clear students typically were satisfied with their academic performance. The proportion, each year, which felt that their academic performance had been less than they had expected was 29%, 26%, 29%, and 8%.

Vocationally clear students were motivated and involved. They were the most likely of the four subgroups to have kept up with their assignments their freshman year (56%), although that proportion slipped to 40% in Years 2 and 3. They were also the most fully involved of the subgroups in their formal academic experience (71%, 69%, 82%). There was a steady increase in the proportion fairly involved in interpersonal relationships with their student peers (from 47% to 51% to 69%). The proportion of vocationally clear students more than somewhat involved with faculty and staff, although initially low, was the highest of the subgroups in Year 3 (2%, 6%, 20%). Work experiences were fairly involving for under half of these students each year (29%, 44%, 43%). They tended not to be very involved in student organization experiences (14%, 27%, 22%).

Perhaps the low initial involvement of vocationally clear students in aspects of the undergraduate experience other than formal academics reflects the fact that only 24% lived on campus their freshman year, the lowest of the four subgroups to do so. This proportion increased to 41% in Year 2, was 33% in Year 3, and 22% in Year 4. In terms of employment, only 28% had part time or fulltime jobs their freshman year, the second lowest proportion of the four subgroups. This proportion increased over time, however, to 69% in the sophomore year, 72% in the junior year, and 73% in Year 4.

Like students in the other subgroups, vocationally clear students considered their peers a major source of support and encouragement (73%, 65%, 71%, 86%). And, like the other subgroups, the proportion which considered staff a major source of support increased, minimally, over time (6%, 11%, 17%). Unlike the other subgroups, however, there was a tendency for vocationally clear students to consider advisors a major source of support and encouragement, particularly in their junior year (5%, 17%, 29%, 23%), and to consider faculty as a major source of support and encouragement, particularly in their senior year (12%, 17%, 23%, 44%).

Along with their high academic motivation and relatively high involvement in their undergraduate experience, vocationally clear students showed the most self-confidence each year, with 40% indicating high levels of self-confidence in Year 1, 61% in Year 2, and 66% in Year 3. The proportion indicating frequent or constant feelings of depression was minimal: 6% in Year 1, 8% in Year 2, and 11% in Year 3.

Forty-seven percent felt, retrospectively, that the most significant change to have occurred in themselves since entering college was related to development in a personal trait or characteristic. In light of the high level of self-confidence reported by these vocationally clear students each year, it is not surprising that only 27% felt that increased feelings of self-confidence and self-worth were the most significant change since matriculation.

Post-graduation variables

Comfort in and stimulation by formal education among vocationally clear students is reflected in the fact that they were the most likely (24%) of the subgroups to have immediate plans to continue their formal education after graduation. Another 64% planned to go to work, and 12% planned something other than employment or further formal education (i.e., travel, or undecided about plans). This group of vocationally clear students was the most likely subgroup to find the transition from college was an easy one for them: 70% felt so. Only 21% felt it had been difficult for them.

Among the vocationally clear students who were employed at the time of the *Graduate Survey*, 28% reported they moved fulltime into a position they already had. Sixty-nine percent felt their job was directly related to their field of study; 21% felt it was somewhat related; only 10% felt it was unrelated to their field of study. However, only 58% felt their job was very much an entry level position to their desired career. Another third (33%) felt that was somewhat or slightly so; 9% felt it was not at all an entry level position to their desired career.

D. VOCATIONALLY REGRESSIVE STUDENTS

Vocationally regressive students composed the smallest subgroup of the four reported for the Representative Group (n = 23). Only 14% felt they had a clear vocational identity at the end of their freshman year, and four years later were much less clear about their vocational goals, interests, and talents. There was a slow decrease in yearly MVS vocational identity scores among these students. Mean scores were 13.0 in Year 1, 10.7 in Year 2, 11.7 in Year 3, and 9.3 in Year 4, out of a possible score of 18.

Prematriculation characteristics

Thirty-five percent of this group of vocationally regressive students were first/only children. Interestingly, there was a relatively high proportion (39%) of middle children among these students, compared with the other subgroups. Vocationally regressive students were the least likely (26%) to have been last born children.

Vocationally regressive students were the most likely subgroup (56%) to come from families in which both parents had a college degree. Only 9% were first generation college students, meaning that neither parents had had any experience with college. With 74% of their fathers, and 56% of their mothers having earned a college degree, vocationally regressive students were from families with the least difference in education level between parents.

Nine percent of the vocationally regressive students reported their combined parent income for 1980 was under $20,000. Sixty-one percent reported it fell between $20,000 and $50,000; 13% reported it was over $50,000. Seventeen percent reported they did not know their parents' income.

There was a sizeable discrepancy in verbal and math aptitude among vocationally regressive students, as indicated by their SAT scores. While their total score averaged 978, their Verbal score was far lower (457) than their Math score (521). They tended to do well in high school, however. Just under half (46%) reported they had been in the top ten percent of their high school graduating class. Being too bored to study while in high school was a problem for 17%, and having trouble concentrating on their assignments had been problematic for 13%.

Characteristics related to the college years

Like the group of vocationally clear students, a large majority (82%) of the vocationally regressive students

had decided on their academic major while still in high school. Nine percent made that decision during their freshman year, and nine percent were still undecided at the end of their freshman year. Unlike the vocationally clear students, however, over half (56%) of the vocationally regressive students who decided on their academic major while still in high school shifted at least one time before graduation; 44% remained with their initial choice of major.

Although in their freshman year, vocationally regressive students were the second most likely subgroup to have felt that their academic performance had not met their expectations, there was a steady decrease in the proportion, each year, who felt that way (36%, 26%, 22%, 16%).

Vocationally regressive students did not demonstrate lack of academic motivation in high school. Once in college, however, each year only about one-third of them reported they kept up with their reading assignments. More generally, for three years about half were invested to any great degree in their formal academic experience (48%, 56%, 56%). While during the sophomore year the proportion of vocationally regressive students fairly involved in interpersonal relationships with their fellow students was relatively high, this was not true during the years prior to and following that year (56%, 70%, 48%). A very low proportion were involved with faculty and staff the first three years (4%, 9%, 4%). Under half were involved to any great extent in work experiences, although the proportions feeling involved in their work increased over time (13%, 36%, 48%). During the freshman year, vocationally regressive students were most likely of the subgroups (44%) to have been fairly involved in student organization experiences; that proportion, however, dipped in Year 2 (to 26%) and then increased to 39% in Year 3.

As a group, vocationally regressive students tended not to live on campus during their undergraduate years (37%, 42%, 34%, 29%). And while just over one-third (35%) were employed either part-time or full-time during the freshman year, approximately 70% were employed during the next two years, and 87% were in Year 4.

Vocationally regressive students were the least likely subgroup to perceive their fellow students as a major source of support and encouragement during the freshman year. However, peers became an increasingly salient source of support with time until their senior year. At that point the proportion perceiving such support and encouragement in their peers was the lowest of the subgroups (44%, 61%, 74%, 68%). Less than one in five vocationally regressive students considered adults in the University community as major sources of support during their years of college (faculty: 13%, 13%, 17%, 14%; staff: 4%, 4%, 17%; advisors: 4%, 9%, 17%, 14%).

Despite the fact that this subgroup was becoming less clear about their vocational identity over time, and that few were involved to any great extent in the undergraduate experience, their feelings of self-confidence increased over time. The proportion of vocationally regressive students reporting frequent feelings of self-confidence increased from 32% in Year 1, to 42% in Year 2, to 61% in Year 3. And while showing a slight vulnerability to feelings of depression in the sophomore year, the proportion indicating frequent feelings of depression nevertheless decreased the following year (8% in Year 1, 13% in Year 2, 4% in Year 3).

Thirty-nine percent of the group of vocationally regressive students felt, retrospectively, that the most significant change to have occurred in themselves since matriculation was related to personal traits or characteristics. Another 26% felt their most significant change was in feelings of self-confidence or self-worth. Interestingly, it is the vocationally regressive students who were the most likely subgroup to have felt their most significant change was related to interpersonal development (17%).

Post-graduation variables

Seventy percent of the students in the vocationally regressive subgroup had plans for employment immediately after graduation. Four percent planned further formal education. Twenty-six percent had no immediate plans for either employment or formal education. Just under half (48%) felt the transition from college had been difficult for them. They were the least likely (39%) subgroup to have felt it had been easy. Thirteen percent weren't sure whether the transition had been difficult or easy for them.

Twenty-six percent of the vocationally regressive students who were employed at the time of the *Graduate Survey* found their position through newspaper listings. The employed students in this subgroup of vocationally regressive students were the least likely (34%) to feel that their job was directly related to their field of study. Forty-four percent felt it was somewhat related, and 22% felt their job was not at all related to their field of study. It is not surprising, then, that only 30% felt their job was very much an entry level position to their desired career. Fifty-two percent felt that was somewhat or slightly true. Seventeen percent felt their current job was not at all related to the career they desired to enter.

III. THREE PROFILES: THE BLACK GROUP

This section looks exclusively at the undergraduate experience of black students who persisted in higher education and earned their degree within five years of matriculation. It is a sad and well-known fact that black students who matriculate at predominantly white campuses typically are far more likely to be at risk of attrition before earning their degree than are majority students. For example, a study of attrition rates of black and white cohorts at several predominantly white universities found that over five years, 45% of the black cohorts left those universities without having graduated, compared with 38% of the white cohorts (Nettles, Thoeny, Gosman & Dandridge, 1985). Therefore, black students such as those included in this report, who not only earned their baccalaureate degree (either at UMCP or elsewhere) within five years of matriculation but also participated in a five year longitudinal study involving annual contact, are a rich source of information about the undergraduate experience.

It must be emphasized, however, that the number of black participants in the Maryland Longitudinal Study who fit the above two criteria is unfortunately quite small (n = 53). This may in part be because of the large number of black students in the MLS study who transferred from UMCP to another institution and in so doing may have lost credits, thereby delaying their graduation to beyond five years from the date of their matriculation at UMCP. The low number may also reflect a trend away from the four- or five-year degree, stimulated by the economic necessity for many students to combine college and employment.

Only three black graduates (6%) had at the end of their freshman year a relatively clear vocational identity and yet four years later their vocational identity was below average in clarity. In light of the low number of vocationally regressive students in the Black Group, the discussion in this section will be restricted to the three remaining subgroups.

Appendix C summarizes these data in tabular form, thereby facilitating insights into trends across time within each subgroup and allowing comparisons among the (three) subgroups.

A. VOCATIONALLY UNDERDEVELOPED STUDENTS

Thirty-two percent (n = 17) of the students in the Black Group studied for this report were individuals whose self-assessed vocational identity at the end of their freshman year was below average and whose vocational identity four years later was still below average. The mean yearly MVS vocational identity score for this subgroup of vocationally underdeveloped students was 7.0 in Year 1, 8.6 in Year 2, 8.1 in Year 3, and 7.7 in Year 4 (out of 18).

Prematriculation characteristics

As with the vocationally underdeveloped students in the Representative Group, vocationally underdeveloped black students were the least likely to have been first or only children (30%). Twenty-nine percent were middle children, and 41% were last borns.

Eighteen percent of black vocationally underdeveloped students were from families in which both parents had their college degree. Thirty-five percent of their fathers and 24% of their mothers had a college degree. Twenty-four percent were first generation college students, e.g., they came from families in which neither parent had had any college experience.

Twenty-four percent of this group of vocationally underdeveloped students reported a combined parent income in 1980 of less than $20,000; none reported it was more than $50,000. Forty-five percent reported it fell between $20,000 and $50,000. Thirty-one percent reported they didn't know their parents' income level—the highest proportion of the three subgroups in the Black Group to so indicate.

Unlike the vocationally underdeveloped students in the Representative Group, vocationally underdeveloped black students did not have good academic records from high school. They had the lowest mean total SAT score of the subgroups studied. Their mean Math score was 398 and Verbal score was 376, for a total of 774. Twenty-four percent reported that they had graduated in the top ten percent of their class, the lowest proportion of the three subgroups. Five percent of the students in this subgroup reported that they had frequently been too bored to study while in high school, and 12% reported they had had trouble concentrating on their studies.

Characteristics related to the college years

Unlike the vocationally underdeveloped students in the Representative Group, the majority (71%) of vocationally underdeveloped students in the Black Group had decided on their academic major before they matriculated at UMCP. The remaining 29% were still undecided at the end of their freshman year. Of those who made the decision concerning their major while they were still in high school, only 17% remained with that choice; 83% shifted their major at least one time before graduation.

As undergraduates, over half of the vocationally underdeveloped black students felt, each year, that their academic performance had been at least as good as they had expected. The proportion who felt it had been less than they had expected was 38% in Year 1, 27% in Year 2, 40% in Year 3, and 12% in Year 4.

Vocationally underdeveloped black students, however, were not very likely to keep up with their college reading assignments. The proportion that reported having done so was the lowest of the subgroups studied: 29% in Year 1, 24% in Year 2, and 24% in Year 3. Further, while just under half (47%) reported they were more than somewhat involved in their formal academic experience (defined as including coursework, lectures, homework, study, independent study and research) their first two years of college, this proportion decreased to 29% by the third year, significantly lower than the other subgroups. The proportion invested to any great degree in their interpersonal relationships with their fellow students decreased as well, from 47% in Year 1 to 29% in Year 2, to 24% in Year 3. There was minimal involvement in interpersonal relationships with faculty and staff over the first three years (6% the first two years and none the third year). The proportion involved in their work experience increased from 24% the freshman year to almost half (47%) their sophomore year; this proportion then decreased to 18% the following year, the lowest of the subgroups. And while the proportion involved to any great extent in student organization experiences increased over their first three years, the proportion remained low (12%, 18%, 29%).

Slightly over half (52%) of the vocationally underdeveloped students in the Black Group lived on campus their freshman year. This proportion increased to 59% in Year 2, and then dropped to 41% in Year 3 and to 29% in Year 4. Slightly over one-third (35%) worked either part time or fulltime their freshman year. The next year, 60% were employed; that proportion dropped to 41% during the junior year, and then increased to 82% the fourth year.

Very few vocationally underdeveloped students in the Black Group saw the adult members of the University community as major sources of support and encouragement during their years of college (faculty: 6% the first three years, 12% in Year 4; staff: 12%, 6%, 12%; advisors: 12%, 19%, 6%, 18%). Fellow students were their most salient source of support: the proportion reporting fellow students as a major source of support and encouragement hovered around 50% for the first three years, and then increased to 77% in Year 4.

Vocationally underdeveloped students showed a unique pattern in their assessment of their feelings of self-confidence over time. The proportion indicating frequent feelings of self-confidence rose from 31% in Year 1 to 62% in Year 2, and then decreased to 47% in Year 3. The junior year was a trying one for them, emotionally. Not only did they tend to experience a drop in self-confidence, the proportion of vocationally underdeveloped students who reported frequent or constant feelings of depression increased, from 19% in Year 1 and 13% in Year 2, to a disturbing 24% in Year 3.

Forty-one percent of the vocationally underdeveloped students in the Black Group felt, looking back over the college years, that the most significant change to have occurred in them since entering college was related to a personal trait or characteristic. Twenty-four percent felt the most significant change had been in their feelings of self-confidence and self-worth. Twenty-nine percent felt it was related to interpersonal development.

Post-graduation variables

None of the vocationally underdeveloped students had immediate plans for further formal education after graduation. Eighty-two percent planned to go to work. Like the vocationally underdeveloped students in the Representative Group, this subgroup was the most likely (18%) not to have made plans immediately after graduation for either more schooling or employment. Vocationally underdeveloped black students were the most likely to report that the transition from college had been difficult for them. Approximately three of four (76%) felt so.

Of the vocationally underdeveloped black students who were employed at the time of the *Graduate Survey*, 36% found their position through newspaper listings. None felt their job was directly related to their field of study. However, 60% felt it was somewhat related. Forty percent felt their job was unrelated to their field of study. Similarly, only 7% felt their job was very much an entry level position to the career they planned to enter. Just under half (49%) felt that was somewhat or slightly true. Sadly, 43% were employed in a job that they felt was not at all an entry level position to their planned career.

B. VOCATIONALLY DEVELOPING STUDENTS

Nineteen percent (n = 10) of the students in the Black Group studied for this report were individuals whose self-assessed vocational identity was inadequately defined at the end of their freshman year and who four years later felt they had a clearer picture of their goals, interests, and talents. Like the vocationally developing students in the Representative Group, there was a marked increase in the mean MVS vocational identity score of black students in this subgroup between their freshman and sophomore years. Mean score in Year 1 was 7.2. In Year 2 the mean rose to 10.4; in Year 3 to 13.9, and in Year 4 to 15.6 (of a possible 18), the highest of the subgroups studied in the Black Group.

Prematriculation characteristics

Vocationally developing students in the Black Group were either first borns or only children (44%), or last borns (44%). Very few (12%) were middle children.

Vocationally developing black students came from relatively highly educated families. While only 20% came from families in which both parents had a college degree, 50% of their fathers and 40% of their mothers had a college degree. Twenty percent were first generation college students, meaning neither parent had had any college experience.

Twenty percent of the students in the vocationally developing subgroup reported a combined parent income for 1980 of less than $20,000; 40% reported it fell between $20,000 and $50,000; 20% reported it was above $50,000. Twenty percent reported they did not know their parents' income.

The mean SAT score of vocationally developing black students was 808, with a mean of 406 for Math, and 402 for Verbal. Thirty percent reported that they had been in the top ten percent of their graduating class. Interestingly, this subgroup was the most likely to have reported having been too bored to study in high school (30%) and having had trouble concentrating on their studies in high school (30%).

Characteristics related to the college years

Seventy percent of the vocationally developing black students had decided on their academic major before matriculating at UMCP. Twenty percent made that decision during their freshman year, and 10% were still undecided at the end of their freshman year. Of those who made the decision while they were in high school, 33% stayed with their decision, and 67% shifted at least one time before graduation.

The freshman year appears to have been a year of transition for vocationally developing black students. For example, 80% of the vocationally developing black students felt they had done less well than they had expected. After that first year, however, the proportion, each year, who felt they had not done as well as they had expected decreased markedly, (10% in Year 2, and 30% in Years 3 and 4).

The proportion of vocationally developing black students reporting they had been able to keep up with their reading assignments was 30% in Year 1, 50% in Year 2, and 30% in Year 3. More generally, while they were the most involved (70%) of the subgroups in their formal academic experience in Year 1, this proportion dipped in Year 2 to 56% and then increased somewhat the next year (to 60%). There was a slow decline in the proportion more than somewhat involved in interpersonal relationships with other students (60%, 56%, 50%) although the proportions remained relatively high. Very few vocationally developing students in the Black Group were involved to any great extent with faculty and staff over the years (10% in Year 1, none in Year 2, 10% in Year 3). The proportion greatly involved in work experiences was under half the first two years and increased to 70% in Year 3, the highest of the subgroups. And while the proportion fairly involved with student organization experiences was higher than the other subgroups, it remained well under half (20%, 33%, 30%).

Vocationally developing black students were the least likely of the three subgroups to have lived on campus their freshman year (40%). However, they were the most likely to have done so in Years 2 (70%), 3 (80%), and 4 (90%). The proportion who were employed was 30% in the freshman year, 60% in the sophomore year, 56% in the junior year, and 100% in Year 4.

While fellow students were a major source of support and encouragement for a majority of vocationally developing black students (50%, 50%, 70%, 80%), advisors also played a relatively salient role in providing them with support, particularly during the first three years (40%, 30%, 40%, 20%). Faculty support was not strong (10%, 0, 10%, 20%), and staff support tended to decrease over time (30% in Year 1, 10% in Year 2, none in Year 3).

Vocationally developing black students entered college with the lowest frequency of feelings of self-confidence and after three years had the highest frequency, of the three subgroups studied. The proportion reporting frequent feelings of self-confidence in Year 1 was 20%; in Year 2 it was 60% and in Year 3 it was 100%). In feelings of depression as well, they showed change over time, with 20% reporting frequent feelings of depression in Year 1, 30% in Year 2, and none in Year 3.

The pattern shown by vocationally developing black students of increased self-confidence over time is reflected in the proportion who felt, retrospectively, that the most significant change to have occurred in them since entering college was related to self-confidence and self-worth (40%). Another 50% reported significant change in a personal trait or characteristic.

Post-graduation variables

Vocationally developing students were the most likely (20%) of the subgroups in the Black Group to have had immediate plans for continuing their formal education after graduation. The remaining 80% had employment plans. Half felt the transition from college had been easy for them; the other half felt it had been difficult.

Among those who were employed at the time of the *Graduate Survey*, 40% had moved fulltime into a position they already held as an undergraduate. Another 30% used newspaper listings to locate their job. Thirty percent felt their job was directly related to their field of study, and another 20% felt that was somewhat true. Fifty percent felt their job was not at all related to their field of study. Unlike the vocationally underdeveloped students, half the vocationally developing students felt their job was very much an entry level position for the career they planned to enter. Another 10% felt that was somewhat or slightly so. However, 40% felt they were

employed in a job which was unrelated to their planned career.

C. VOCATIONALLY CLEAR STUDENTS

Forty-three percent (n = 23) of the students in the Black Group studied for this report had a relatively well developed vocational identity at the end of their freshman year, and four years later that was still true. Mean yearly MVS vocational identity scores for this group of vocationally clear students were 14.6 in Year 1, 14.4 in Year 2, 14.8 in Year 3 and 15.3 in Year 4.

Prematriculation characteristics

While 38% of the vocationally clear students were first born or only children, this subgroup was least likely (33%) to have been last borns. Twenty-nine percent were middle children.

As was true of the vocationally clear students in the Representative Group as well, the black students in this subgroup did not tend to come from highly educated families. Forty-three percent were first generation students, the highest proportion of the subgroups. Only 9% came from families in which both parents had their college degree. Twenty-eight percent of their fathers, and 22% of their mothers had earned their college degree.

Twenty-six percent of the vocationally clear students in the Black Group reported their combined parent income for 1980 was less than $20,000; 44% reported it fell between $20,000 and $50,000; and 13% reported it was above $50,000. Seventeen percent reported they did not know their parents' income.

Vocationally clear black students had the highest mean total SAT score of the subgroups (881), earning a mean Math score of 451 and Verbal score of 430. They were also most likely (43%) to have been in the top ten percent of their graduating class.

Unlike the students in the Black Group who entered college with a low vocational identity, vocationally clear black students were unlikely to have experienced troublesome study habits in high school. Four percent reported having been too bored to study, and none reported having had trouble concentrating in high school.

Characteristics related to the college years

Eighty-seven percent of the vocationally clear students in the Black Group had decided on their academic major while they were still in high school. The remainder (13%) made that decision during their freshman year. Seventy percent of those who decided on their major before they matriculated at UMCP stayed with that major; 30% shifted their major one time before graduation.

Generally, vocationally clear black students felt their academic performance was at least as good as they had expected it would be. The proportion, each year, who felt they had done less well than they had expected decreased from 39% in the freshman year, to 33% in Year 2, 22% in Year 3, and 19% in Year 4.

The academic motivation of vocationally clear black students that was evident at the high school level was evident in college as well. Students in the vocationally clear subgroup were the most likely subgroup in the Black Group to have kept up with their assignments over time. The proportion reporting having done so was 56% in Year 1, 46% in Year 2, and 47% in Year 3. Further, approximately half reported they were fairly involved with their formal academic experiences their first two years. This proportion increased by the third year to 79%, the highest of the subgroups. In addition, they had the highest proportion of the subgroups reporting substantial involvement in interpersonal relationships with student peers each year (70%, 82%, 68%). While there was a minimal tendency to be involved to any great extent with faculty and staff the first two years, almost one-third were involved in Year 3, the highest of the subgroups (9%, 4%, 32%). Approximately one-third were fairly involved in work experiences the first two years; this proportion increased to 58% in Year 3. Vocationally clear black students were generally not involved in student organization experiences (9%, 27%, 16%).

Just over half of the vocationally clear black students (52%) lived in residence halls their freshman year. This proportion increased slightly the next year (to 54%) and then dropped in Years 3 (40%) and 4 (29%). There was a steady increase in the proportion who were employed: 35% in Year 1, 53% in Year 2, 67% in Year 3 (the highest of the subgroups), and 74% in Year 4.

While vocationally clear students in the Black Group saw their student peers as a major source of support and encouragement each year (56%, 59%, 68%, 57%), adults in the University community were considered a relatively major source of support as well. As with the vocationally clear students in the Representative Group, faculty played a salient role as sources of support and encouragement for these students, particularly in the junior year (9%, 14%, 42%, 24%). Staff (4%, 27%, 16%) and advisors (9%, 38%, 26%, 19%) were seen as supportive and encouraging particularly in the sophomore year.

Vocationally clear black students began their college career not only highly motivated but also highly self-confident, and remained so. The proportion who reported having typically felt self-confident in Year 1 was 61%, in Year 2 it was 64%, and in Year 3 it was 70%. Along with their self-confidence went infrequent feelings of depression. The proportion of vocationally clear black students reporting frequently or constantly feeling depressed was 13% in Year 1, 4% in Year 2, and 10% in Year 3.

Half (50%) of the vocationally clear black students felt, retrospectively, that the most significant change to have occurred in them since matriculation was related to personal traits or characteristics. Another 23% felt significant changes had occurred in their feelings of self-confidence and self-worth.

Post-graduation variables

Despite the high motivation of vocationally clear black students, and despite their relatively high degree of personal investment in the undergraduate experience, they were unlikely to have plans for further formal education after graduation. Ninety-one percent had immediate plans for employment after graduation; only 9% planned to go on for further formal education. Vocationally clear black students were the most likely to have found the transition from college was easy for them: 83% felt that. Only 13% felt it had been difficult for them, and 4% didn't know.

Among the vocationally clear black students who were employed at the time of the *Graduate Survey*, the majority found their job either through newspaper listings (26%) or through friends or relatives (21%). Nearly one-third (32%) felt their job was directly related to their field of study. Nearly half (47%) felt that was somewhat so. Twenty-one percent felt it was unrelated to their field of study. These students were most likely to perceive their job as very much an entry level position for their planned career. Over half (53%) felt that was very much so, and 32% felt it was somewhat so. Only 16% felt they were employed in a job that was unrelated to their planned career.

IV. IMPLICATIONS

This section suggests implications for the University community of the findings discussed in the previous two sections. It must be kept in mind that the number of MLS students included in the analysis for this report is not large (169 in the Representative Group and 50 in the Black Group). The criteria for inclusion in the data analyses were stringent:

- students must have earned a baccalaureate degree either from UMCP or from a transfer institution within five years of matriculation at UMCP;
- they must have participated in the Maryland Longitudinal Study through the completion of the *Graduate Survey*.

While generalizations must be made with caution, information gathered by the Maryland Longitudinal Study are the best available longitudinal data concerning the experience of students, particularly black students, who were undergraduates during the 1980s. The observations in this report can be used both to enhance understanding of some of the processes and outcomes of the undergraduate experience and to stimulate discussion of how the University can respond most effectively to increase the probability that current and future students will persist in higher education until graduation.

It is difficult to read and retain details in a report of this magnitude. Therefore the reader is referred back to the Executive Summary which summarizes highlights of the profiles discussed for the Representative Group and the Black Group. The reader is reminded that Appendix B and C show in tabular form the findings of this report.

Vocational ambiguity and choice of academic major

There is a noticeable difference between the Representative Group and the Black Group in the proportion of students with a low initial vocational identity who nevertheless decided on an academic major while still in high school. While under half of the students in the Representative Group who had a low initial vocational identity entered college with a declared major, approximately 70% of the students with low initial vocational identities in the Black Group did so. It would be interesting to know to what extent this difference is indicative of differences in vocational counseling at the high school level. Black students who do not yet know what their academic and vocational interests are may feel compelled to decide on a major nevertheless. The fact that there was a high degree of shifting of major among those with a low initial vocational identity—and a low degree of shifting of major among those with a high initial vocational identity—suggests that declaration of academic major among students with unclear vocational identities may be premature. Entering freshmen with a low vocational identity need to (learn how to) articulate their interests and values and be aware of their motivations, as they consider their selection of a major field.

The normative data reported in Appendix A suggest that vocational clarity, as measured by the vocational identity subscale of the MVS in students who were in college during the 1980's, is decreasing over time. That trend, together with the findings reported above, highlight the importance for students to have the opportunity to evaluate their evolving interests, skills and motivations in a systematic and ongoing way, beginning at the high school level, and throughout the undergraduate years.

The findings also stress the need for adult members of the campus community to be particularly aware of the importance of identifying students who have a low self-awareness of their interests and skills and motivations, and encouraging them to use *the self-exploration resources* at the Counseling Center and the *career exploration resources* at the Career Development Center.

Vocational identity and academic success

Students with low initial vocational identities shared similarities in prematriculation characteristics. In addition to being more likely than students with a high initial vocational identity to be undecided in their major their freshman year, they were less likely than students with a high initial vocational identity to report having been in the top 10% of their high school graduating class. This may be evidence of a relationship between early vocational confusion and low academic motivation. Entering freshmen who are unclear about their interests, goals, and motivations may find it difficult to make choices about their academic program, and without the incentive of articulated goals, they may be less likely to involve themselves to any degree in their formal academic experience.

Figures 3 and 4 depict grade point averages at UMCP for the subgroups under discussion, for the first four semesters at UMCP. Generally speaking, there is more variability in grades among those with large shifts in their vocational identity between Years 1 and 4 than among those whose vocational identity remained either below or above average.

The vocational identity scores of vocationally underdeveloped students demonstrate a high tolerance for vocational ambiguity, which extends to self-knowledge of one's skills, trainability, and interests. While each year's vocational identity scores reflect a slight increase in self-knowledge, the scores also indicate that whatever information and feedback they may have received was insufficient to clarify their doubts. As depicted in Figures 3 and 4, by the end of the fourth semester, they had earned the lowest GPAs of the subgroups.

On the other hand, the vocational identity scores of vocationally developing students show their most dramatic increase between the end of the freshman and sophomore years. This suggests that the sophomore year provided important feedback for their development and that subsequent years confirmed that feedback. Vocationally developing students showed the most variability in their grades over time. In both the Representative Group and the Black Group, they earned both the lowest and the highest GPAs of the subgroups under discussion. Their fourth semester was a critical one, with dramatic increases in GPA.

The vocational identity scores of vocationally clear students suggest that their self-perceptions in relation to the vocational domain were clear at the beginning of their undergraduate career and were confirmed over their subsequent undergraduate years. The grades they earned during their first two years were fairly consistent as well.

The vocationally regressive students are a particularly intriguing group because those who lasted until graduation appeared to be undernourished in terms of realistic self-perceptions and feedback. Many students among the initial MLS population who didn't survive in the undergraduate system may well have been included in this group had they remained enrolled until graduation. Since this report only focuses on students who earned their baccalaureate degree within five years of matriculation, non-persisters were not studied. Therefore, we can only conjecture that it is the vocationally regressive students who are most vulnerable to attrition from higher education. In the Representative Group only 14% of baccalaureate recipients fell into that subgroup, while in the Black Group only 6% did so (a number too small to consider in this report).

FIGURE 3
Grade Point Averages for Four Semesters
Representative Group

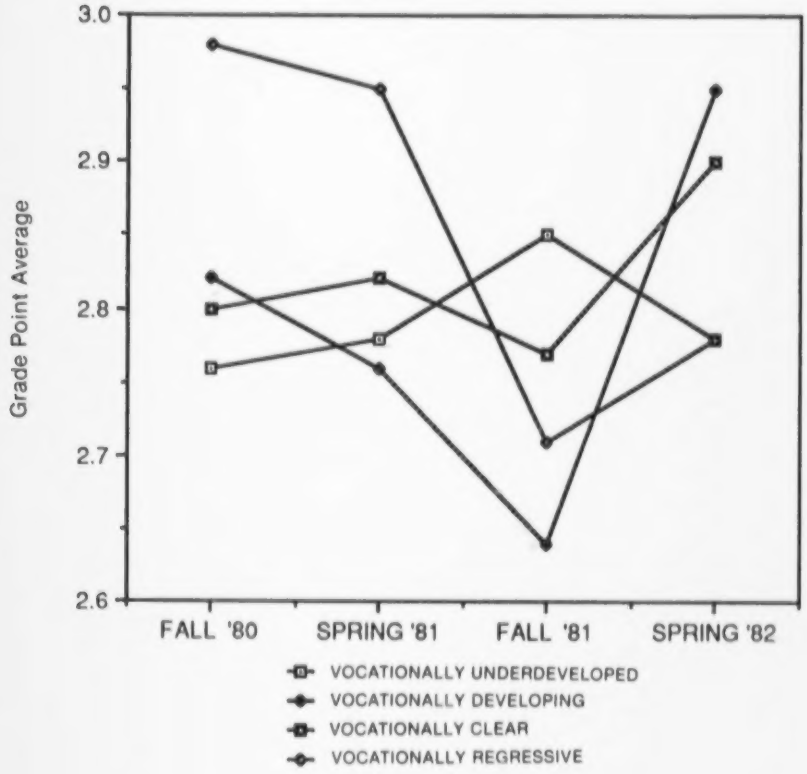
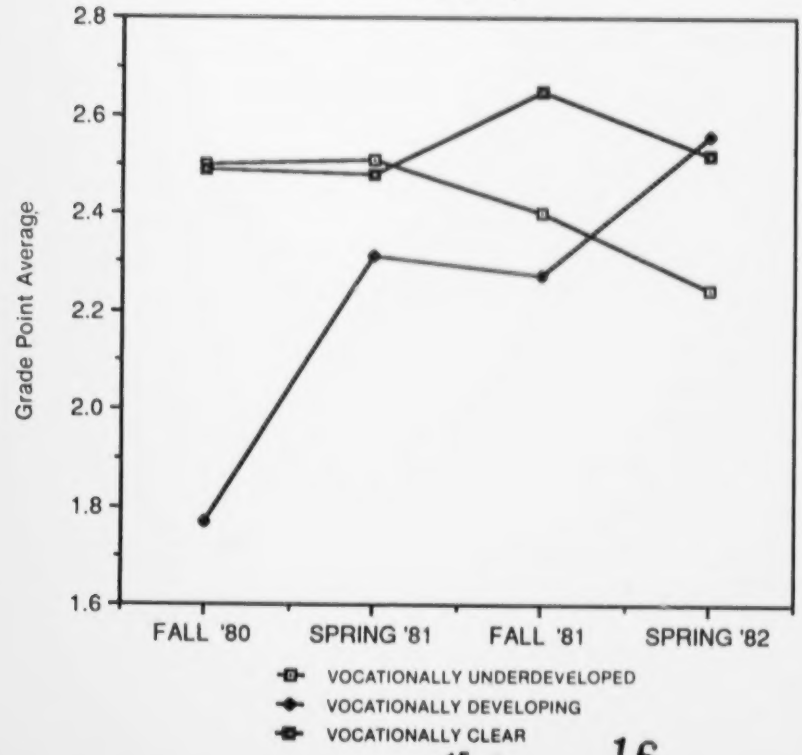


FIGURE 4
Grade Point Averages for Four Semesters
Black Group



If students with an initial high level of vocational identity who subsequently experience a decrease in vocational clarity are indeed a source of attrition from the university, they are a population who would benefit from close institutional attention. Their vocational identity scores suggest that during their undergraduate years, these students received information and/or feedback which undermined their initial sense of vocational identity. Yet the information or feedback needed to reclarify their identity—vocational, personal, and intellectual—was missing or insufficient.

It is interesting to note that the vocationally regressive students in this report did not lack the ability to do college-level work. Indeed, their grades at UMCP were by far the highest of the other subgroups in the Representative Group their freshman year. However, fall semester of their sophomore year shows a dramatic plunge in their grades, which was only partially remedied during their fourth semester at UMCP.

Thus, the fall semester of the sophomore year appears to be a critical semester for proactive interventions and interactions. Faculty, staff, and advisors should remain aware that efforts to enhance the personal relevance of the sophomore year experience are likely to have a positive long-term effect on students' identity development. Such contact is especially important since the sophomore year is a time when class sizes are large and the chances of students' and faculty interests overlapping are not as high as in later years. Beyond-the-classroom interactions between faculty and undergraduates can personalize and make more accessible for students not only individual faculty members but also a career in higher education.

Many of the vocationally regressive students were commuters. Fellow students therefore may not have been the source of support and encouragement for them they were for the other subgroups, particularly in the freshman year. Consequently these students may have been underexposed to student word-of-mouth as a source of information and resource referral. Perhaps with proactive intervention on the part of the university community, these students can increase both their self-awareness and their awareness of ways in which campus resources and experiences can help them enhance their long range planning, with the immediate impact of making the undergraduate experience as relevant and meaningful as possible.

Vocational identity and investment in the undergraduate experience

There appears to be a relationship between low vocational identity and a low degree of investment in the undergraduate experience. This relationship is highlighted by the finding that vocationally developing students, whose vocational clarity doubled between their first and second years of college, reported increased involvement in their academic experiences after their freshman year. In contrast, among vocationally underdeveloped students, not only did their motivation to keep up with their assignments decrease over time, but they showed the least degree of involvement over time in other aspects of the undergraduate experience as well.

The number of vocationally underdeveloped students who by their junior year were only minimally involved in their college experience is disturbing. Equally disturbing, in the Black Group, is the lowered self-confidence and relatively high incidence of depression during the junior year for these students. A low vocational identity in the freshman year, as measured by the MVS Vocational Identity subscale is indicative of a low awareness of one's interests, talents, values, and individuality, and how these can fit positively into the world of work. After four years of college, a low vocational identity may also be indicative of a low level of awareness of available campus resources and aids—such as those found at the Career Development Center or the Counseling Center—and/or low motivation or incentive needed to pursue these resources and aids. Students in the Maryland Longitudinal Study responded each year to MLS questions not only about their developmental gains in various areas of their identity, but also about their use of the various resources on campus (see MLS Research Report #8: Students' Perceptions of Campus Services). Therefore while the students referred to in this report may have been unaware of the *location* of these resources, it is unlikely that they were unaware of the *existence* of the resources. It is beyond the scope of this report to question the dynamics behind low motivation to increase self-awareness. It is within the realm of this report to highlight the existence of those dynamics, and to ask faculty, advisors, and staff to reflect on the implications of those dynamics on their interactions with present and future students.

Vocational clarity and graduate education

Since a sizeable proportion of current faculty members will be retiring within the next few years it is becoming apparent that there will be an increasing need for new Ph.D.'s. Campuses are already finding themselves engaged in competition for the small pool of new doctorate recipients each year. Further, there is an increasing interest in the recruitment of minority faculty. The figures cited in the present report as well as in the retention/attrition literature generally regarding the low number of black students earning their baccalaureate—and the even lower number choosing to continue in higher education—should be alarming to those who value diversity in higher education. Clearly the demand for minority faculty will ultimately exceed the supply of new minority doctorate recipients, if it does not yet do so.

The baccalaureate degree is only the first step toward the doctorate. It takes an additional five to ten years after the baccalaureate to obtain the Ph.D. Universities such as the University of Maryland at College Park must take the long view and see that more attention is paid to helping students who are unfamiliar with higher education in general to consider higher education as more than a means to a career, but also as a possible career in itself.

The students in the Representative Group most likely to have plans to continue their formal education after graduation (vocationally clear students) were also most likely to report a high degree of interpersonal involvement with adult members of the academic community. This relationship is less clear in the Black Group. While black students with clear vocational identities were most likely to report interpersonal interactions with adult members of the academic community, and to see those adults as major sources of encouragement and support, they are not the students most likely to report plans to continue their formal education after graduation. Black students may rely on faculty and staff to provide the support and encouragement to remain enrolled in college, especially at a historically white campus. However, economic pressures may interfere with future educational plans after graduation. Recall that vocationally clear students not only were most likely to be first generation college students but also were least likely to be the last sibling in the family and by implication, not the last family member to incur heavy education expenses.

The evidence of a relationship between vocational clarity, a high degree of interpersonal interaction with

and encouragement from faculty, advisors, and staff, and the likelihood of pursuing a post-baccalaureate degree, highlights the need for adult members of the academic community to take an active role in initiating interpersonal interactions with undergraduate students. Faculty and staff encouragement and support are relatively untapped resources for helping students both to learn to clarify and confront the realities beyond the college campus and to weigh the costs and benefits involved in choosing a vocational path which allows them to become members of the academic community.

CONCLUSION

Findings in this report question the degree to which it is realistic for the University community to assume that all of today's undergraduates can deal with the stresses and decisions imposed by the undergraduate experience, without some type of individual adult support or institutional response. This lack of informed adult perspective is particularly exacerbated for students whose parents do not share reality-based understanding of the collegiate experience. For this group of students in particular, institutional resources in the forms of concerned faculty and staff, and appropriate programming, are essential, not only to enhance the undergraduate experience but to increase the graduation rate.

Historically, parents, and later, college authorities designated as "in loco parentis," assumed a set of responsibilities for students during their undergraduate years. However, over time, much of that responsibility has been shifted from the parent or parent substitute onto the individual student. The degree to which members of the university community have a humanistic as well as professional commitment actively to promote student development is an individual as well as a system decision. While a distinction should be made between concern and interference, individual faculty members, advisors, and staff in and beyond the residence halls should be alert to their role as resource referral agents.

When university personnel become aware of a student whose intellectual, personal, or vocational development seems static, they should take the initiative to inform the student of resource options. Motivation to explore and experience opportunities on a campus which promote personal growth is a critical aspect of involvement in the undergraduate experience. A student's decision not to seek such opportunities should be a conscious one and not left to default or lack of awareness.

The causes of attrition from a degree program before earning a degree have been studied for over 20 years. One recurring issue mentioned in the literature is that of "motivation" or "burnout." Findings in this report suggest that there may be a relationship between motivation and vocational identity. The undergraduate experience consists of formal academic learning and beyond the classroom learning. Being able to generalize that learning to a broader context may be critical to persisting in college until graduation, to a successful undergraduate experience, and to a natural and personally relevant transition from undergraduate to post-graduate status.

APPENDIX A

NORMATIVE DATA FOR THE VOCATIONAL IDENTITY SUBSCALE OF *MY VOCATIONAL SITUATION*

SAMPLE	N	M	S.D.
College students: 1980 (a)			
Men	121	11.3	4.1
Women	122	10.1	4.2
UMCP freshmen: 1981 (b) Representative Group			
Men	217	10.48	4.9
Women	239	9.62	4.9
UMCP freshmen: 1981 (b) Black Group			
Men	104	10.13	4.9
Women	213	10.37	4.6
University freshmen: 1988 (a)			
Men	1181	9.9	4.7
Women	1351	9.8	4.7
Undeclared freshmen: 1988 (a)			
Men	39	8.9	4.9
Women	80	6.3	4.2

(a) Source: Lucas, E.B., Gysbers, N.C., Buescher, K.L., & Heppner, P.P. (1988). My Vocational Situation: Normative, psychometric, and comparative data. *Measurement and Evaluation in Counseling and Development, 20,* 162-170.

(b) Source: Maryland Longitudinal Study.

APPENDIX B

DEMOGRAPHIC AND PERSONAL INFORMATION BY SUBGROUP

Representative Group

	SUBGROUP			
	Vocationally Underdeveloped (n = 50)	Vocationally Developing (n = 29)	Vocationally Clear (n = 67)	Vocationally Regressive (n = 23)
MVS Vocational Identity score (means)				
freshman year	5.0	5.8	14.1	13.0
sophomore year	7.8	10.2	14.3	10.7
junior year	8.4	12.1	15.1	11.7
senior year	8.9	15.4	16.1	9.3
	%	%	%	%
Prematriculation characteristics				
Sibship order				
First/only child	28	38	37	35
Middle child	21	31	29	39
Last born child	51	31	34	26
Parent education				
No college experience	6	17	24	9
Both parents with degree	44	28	30	56
Parent income (1980)				
less than $20,000	2	0	6	9
$20,000-50,000	52	42	56	61
more than $50,000	28	41	21	13
don't know	18	17	17	17
High school: academics				
Top 10% of h.s. class	32	34	47	46
Too bored to study	22	10	15	17
Had trouble concentrating	22	10	9	13
SAT scores (means)				
Math	544	506	519	521
Verbal	490	468	472	457
Total	1034	974	991	978
Characteristics related to the college years				
Decided on major				
in high school	37	48	80	82
(shifted major	71	72	42	56)
freshman year	22	24	17	9
after freshman year	41	28	3	9
Kept up with assignments				
freshman year	42	41	56	30
sophomore year	37	41	40	26
junior year	26	59	40	39
Fall semester went less well than expected, academically				
freshman year	44	27	29	36
sophomore year	39	25	26	26
junior year	23	23	29	22
senior year	16	21	8	16
First four semesters' UMCP grade point averages				
Fall 1980	2.76	2.82	2.80	2.98
Spring 1981	2.78	2.76	2.82	2.95
Fall 1981	2.85	2.64	2.77	2.71
Spring 1982	2.78	2.95	2.90	2.78
High involvement:				
Formal academic experience				
freshman year	51	52	71	48
sophomore year	56	72	69	56
junior year	58	74	82	56
Interpersonal/students				
freshman year	67	69	47	56
sophomore year	65	59	51	70
junior year	52	63	69	48

Interpersonal/faculty, staff				
freshman year	6	0	2	4
sophomore year	2	10	6	9
junior year	2	7	20	4
Work (full or parttime, paid or volunteer)				
freshman year	15	29	29	13
sophomore year	35	52	44	36
junior year	52	59	43	48
Student organization activities				
freshman year	20	17	14	44
sophomore year	30	17	27	26
junior year	38	15	22	39
Dorm resident				
freshman year	48	48	24	37
sophomore year	65	59	41	42
junior year	38	30	33	34
senior year	24	28	22	29
Employed part or fulltime				
freshman year	26	41	28	35
sophomore year	44	74	69	69
junior year	65	73	72	71
senior year	80	90	73	87
Major sources of support and encouragement:				
Faculty				
freshman year	10	10	12	13
sophomore year	6	11	17	13
junior year	21	26	23	17
senior year	19	25	44	14
Staff				
freshman year	2	0	6	4
sophomore year	0	7	11	4
junior year	15	15	17	17
Advisors				
freshman year	2	0	5	4
sophomore year	2	11	17	9
junior year	10	18	29	17
senior year	19	26	23	14
Students				
freshman year	63	76	73	44
sophomore year	74	69	65	61
junior year	79	74	71	74
senior year	92	79	86	68
High self-confidence				
freshman year	21	32	40	32
sophomore year	48	58	62	42
junior year	60	59	66	61
High level of depression				
freshman year	19	7	6	8
sophomore year	26	17	8	13
junior year	19	8	11	4
Most significant change since entering college				
interpersonal development	6	7	6	17
personal traits	35	46	47	39
self-confidence/self-worth	44	31	27	26
achievement-related	6	7	12	9
other	8	7	8	9
Post-graduation variables				
Immediate plans after graduation				
employment	67	93	64	70
more formal education	8	0	24	4
other	25	7	12	26
Transition from college				
hard	46	48	21	48
easy	48	45	70	39
don't know/other	6	7	9	13

Resource used to locate position				
college placement/professor	15	14	18	9
newspaper listing	15	18	9	26
direct application	20	18	21	17
friend/relative	27	29	23	9
already had it	15	14	28	17
other	7	7	2	22
Job related to field of study				
directly	41	64	69	34
somewhat	37	21	21	44
not at all	22	14	10	22
Current job is entry level position to desired career				
very much	41	71	58	30
somewhat	24	4	24	39
slightly	15	21	9	13
not at all	20	4	9	17

APPENDIX C

DEMOGRAPHIC AND PERSONAL INFORMATION BY SUBGROUP

Black Group

	SUBGROUPS		
	Vocationally Underdeveloped (n = 17)	**Vocationally Developing (n = 10)**	**Vocationally Clear (n = 23)**
MVS Vocational Identity score (means)			
freshman year	7.0	7.2	14.6
sophomore year	8.6	10.4	14.4
junior year	8.1	13.9	14.8
senior year	7.7	15.6	15.3
	%	%	%
Prematriculation characteristics			
Sibship order			
First/only child	30	44	38
Middle child	29	12	29
Last born child	41	44	33
Parent education			
No college experience	24	20	43
Both parents with degree	18	20	9
Parent income (1980)			
less than $20,000	24	20	26
$20,000-50,000	45	40	44
more than $50,000	0	20	13
don't know	31	20	17
High school: academics			
Top 10% of h.s. class	24	30	43
Too bored to study	5	30	4
Had trouble concentrating	12	30	0
SAT scores (means)			
Math	398	406	451
Verbal	376	402	430
Total	774	808	881
Characteristics related to the college years			
Decided on major			
during high school	70	70	87
(shifted major	83	67	30
freshman year	0	20	13
after freshman year	29	10	0
Kept up with assignments			
freshman year	29	30	56
sophomore year	24	50	46
junior year	24	30	47

Fall semester went less well than expected, academically			
freshman year	38	80	39
sophomore year	27	10	33
junior year	40	30	22
senior year	12	30	19
First four semesters' UMCP grade point averages			
Fall 1980	2.50	1.77	2.49
Spring 1981	2.51	2.31	2.48
Fall 1981	2.40	2.27	2.65
Spring 1982	2.24	2.56	2.52
High involvement:			
Formal academic experience			
freshman year	47	70	52
sophomore year	47	56	54
junior year	29	60	79
Interpersonal/students			
freshman year	47	60	70
sophomore year	29	56	82
junior year	24	50	68
Interpersonal/faculty, staff			
freshman year	6	10	9
sophomore year	6	0	4
junior year	0	10	32
Work (full or parttime, paid or volunteer)			
freshman year	24	40	29
sophomore year	47	44	33
junior year	18	70	58
Student organization activities			
freshman year	12	20	9
sophomore year	18	33	27
junior year	29	30	16
Dorm resident			
freshman year	52	40	52
sophomore year	59	70	54
junior year	41	80	40
senior year	29	90	29
Employed part or fulltime			
freshman year	35	30	35
sophomore year	60	60	53
junior year	41	56	67
senior year	82	100	74
Major sources of support and encouragement:			
Faculty			
freshman year	6	10	9
sophomore year	6	0	14
junior year	6	10	42
senior year	12	20	24
Staff			
freshman year	12	30	4
sophomore year	6	10	27
junior year	12	0	16
Advisors			
freshman year	12	40	9
sophomore year	19	30	38
junior year	6	40	26
senior year	18	20	19
Students			
freshman year	47	50	56
sophomore year	53	50	59
junior year	47	70	68
senior year	77	80	57
High self-confidence			
freshman year	31	20	61
sophomore year	62	60	64
junior year	47	100	70

High level of depression			
freshman year	19	20	13
sophomore year	13	30	4
junior year	24	0	10
Most significant change since entering college			
interpersonal development	29	10	4
personal traits	41	50	50
self-confidence/self-worth	24	40	23
achievement-related	0	0	9
other	6	0	14
Post-graduation variables			
Immediate plans after graduation			
employment	82	80	91
further formal education	0	20	9
other	18	0	0
Transition from college			
hard	76	50	13
easy	24	50	83
don't know/other	0	0	4
Resource used to locate position			
college placement/professor	0	10	10
newspaper listing	36	30	26
direct application	17	10	16
friend/relative	9	10	21
already had it	17	40	16
other	22	0	10
Job related to field of study			
directly	0	30	32
somewhat	60	20	47
not at all	40	50	21
Current job is entry level position to desired career			
very much	7	50	53
somewhat	28	10	32
slightly	21	0	0
not at all	43	40	16

ENDNOTES

1. The Maryland Longitudinal Study (MLS) was a five year study, conducted by the Division of Student Affairs, of 772 individuals who entered The University of Maryland College Park (UMCP) in the fall of 1980. The MLS gathered information about participants' undergraduate experience by means of yearly data collections which included both interviews and paper and pencil instruments. A complete description of the study, its purposes, goals, features, participants, and design can be found in MLS RESEARCH REPORT #1: A DESCRIPTIVE OVERVIEW (1).

The 772 participants in the MLS are treated as two groups. The Representative Group was a random sample comprised of 468 students representing the ethnic diversity of the freshman class entering in the fall of 1980. It is therefore important for the reader to keep in mind that the Representative Group is *not* an all-white sample. The Black Group was not a random sample; rather it was comprised of all the black entering freshmen in the fall of 1980 who agreed to participate in the study (n = 339). For purposes of analysis, data from black students randomly selected for inclusion in the Representative Group (n = 36) are also included as part of the Black Group. As with previous MLS Research Reports, because the two Groups were identified using the different selection criteria mentioned above, they are discussed separately in this report.

2. The *Graduate Survey*, completed by MLS participants who earned their baccalaureate degree, was designed to elicit both a retrospective view of their undergraduate experience and a self-assessment of their intellectual, personal, and vocational development. Many of the questions on the *Graduate Survey* used in this report asked respondents to rate either the amount of gain they thought they had made toward a specified developmental goal since matriculation, or the degree of satisfaction experienced in a given activity. In both cases, the ratings were along a five point scale with high values (e.g., 4 or 5) indicating large gains or high satisfaction. In this report, "positive" responses refer to those responses rated 4 or 5 on the scales in the *Graduate Survey*.

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